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Craigie Drawbridge and Craigie Dam Bridge Rehabilitation Project

Public Meeting

November 17, 2008

Commonwealth of Massachusetts

Department of Conservation and Recreation

HARDESTY & HANOVER, LLP

Commonwealth of Massachusetts

Governor
Deval L. Patrick

Lieutenant Governor
Timothy Murray

Energy and Environmental Secretary
Ian A. Bowles

Department of Conservation and Recreation Commissioner
Richard K. Sullivan, Jr.

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Accelerated Bridge Program

- C. 233 of the Acts of 2008
- Nearly $3 billion to repair 250 to 300 bridges across the Commonwealth over FY2009 – FY2017
- Goals:
  - Public safety
  - Job creation
  - $1.5 billion in savings in construction inflation and deferred maintenance costs.

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DCR Mission Statement

To protect, promote and enhance our common wealth of natural, cultural and recreational resources.

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Project Location

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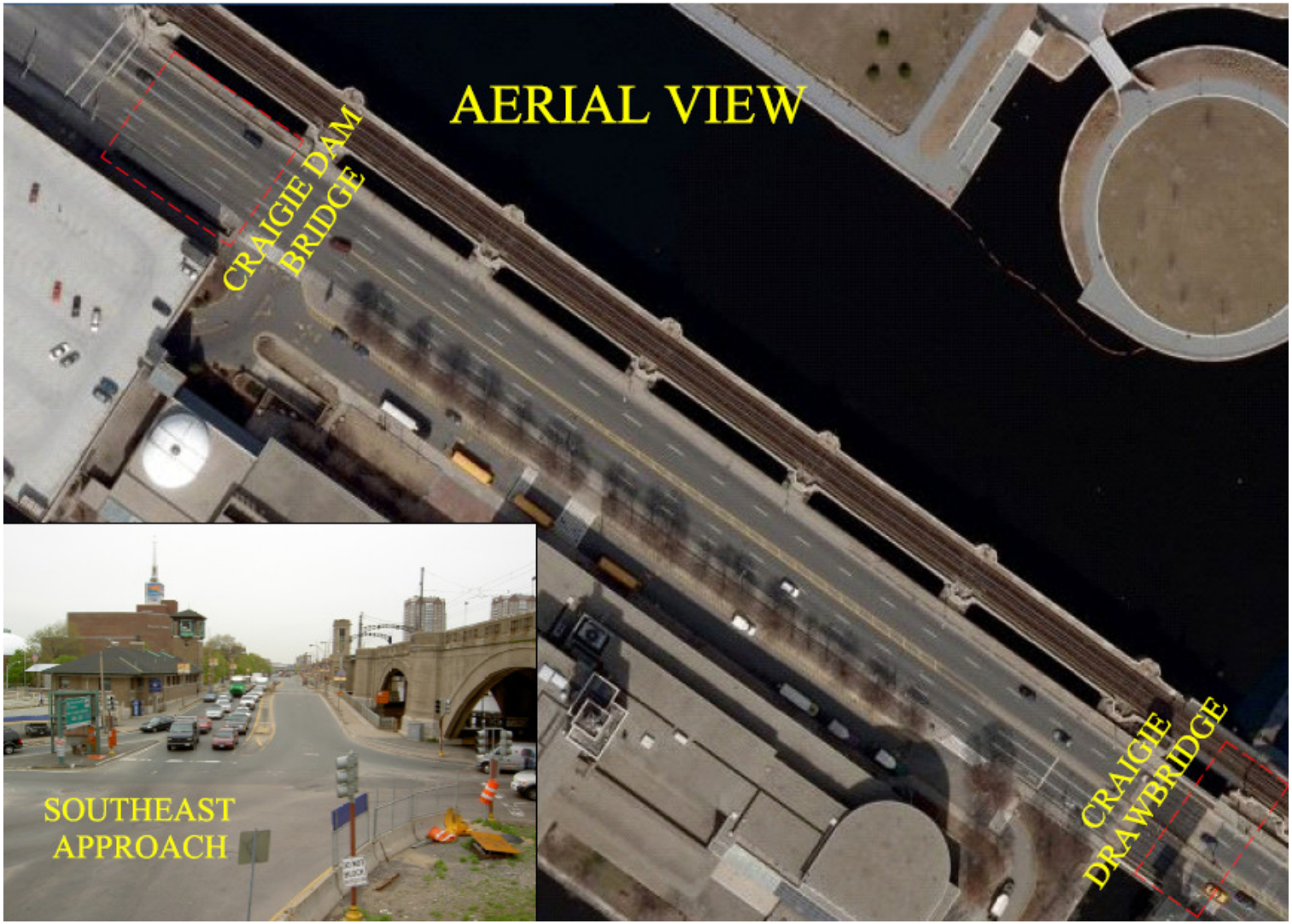

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Public Benefits

- Improved public safety
- Improved flow for pedestrian, bicycle, and vehicular traffic
- Restoration of a historic structure

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Project Goals

- Craigie Drawbridge
  - Provide a new twin double-leaf bascule bridge that provides reliable passage for mariners and improves vehicular and pedestrian traffic flow and conditions.
- Craigie Dam Bridge
  - Repair the dam bridge so that the new structural members can provide safe travel for vehicular and pedestrian traffic.
  - Widen the existing pathway in front of the Museum of Science to provide better access for pedestrians and cyclists.
  - Restore ,in kind, the historic fence on the downstream wall of the Charles River Dam.

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Pedestrian and Bicycle Flow Improvements

- Project Constraints
  - The Craigie Bridge Project site is an earthen-filled dam with very little room for expansion.
  - The project is abutted by the State Police Barracks and the MBTA Green Line Viaduct Right-of-Way.
  - The existing historical properties of the site, e.g., granite structures, need to be maintained.

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Pedestrian and Bicycle Flow Improvements

- Project Improvements
  - Replacement of the existing 5'-wide sidewalk in front of the Museum of Science with a new 10'-wide multi-use path, involving removal of the existing retaining wall and replacement with a new wall at the back edge of the new path.
  - Removal of lighting and utility obstructions at the edge of the existing sidewalk and relocation into the new retaining wall.
  - Replacement of open grating sidewalk on the Craigie Drawbridge with a concrete, solid deck, sidewalk.
  - DCR will evaluate the options for additional improvements for bicycle and pedestrian traffic flow across the Craigie Drawbridge and Craigie Dam Bridge.

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Craigie Drawbridge

- DCR - Owned Bridge
- Originally constructed in 1910 and replaced in 1962
- Twin Double-Leaf Bascule Bridge
  - 45 ft. span over navigation channel
  - 3 “Boston Bound” traffic lanes
  - 2 “Cambridge Bound” traffic lanes
  - Sidewalks on each side
  - Abutted by the MBTA Green Line and the Museum of Science

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Craigie Drawbridge Assessment

- **Inspection**
  - June 25, 2007
  - Conducted By Hardesty and Hanover, LLP
    - Ted Long, P.E. (Team Leader)
    - Alec Noble, P.E.
    - Matthew Gagliano, P.E.
  - Visual Inspection of all structural, electrical, and mechanical components of the bridge.
- Machinery Components
  - Range: Serious – Good Condition
- Electrical Components
  - Range: Serious – Good Condition
- Structural Components
  - Deck – Poor Condition
  - Superstructure – Critical Condition
  - Substructure – Fair Condition

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Existing Condition of the Drawbridge

Most structural members (girders, floor beams, stringers, etc..) are severely corroded and/or exfoliated extensively.

Mechanical Components (trunnions, bearings, and gears) are deteriorated and in need of repair, also there has been extensive build up of debris.

Electrical Components that help to control the operation of the bridge are either failing or in critical need of repair.

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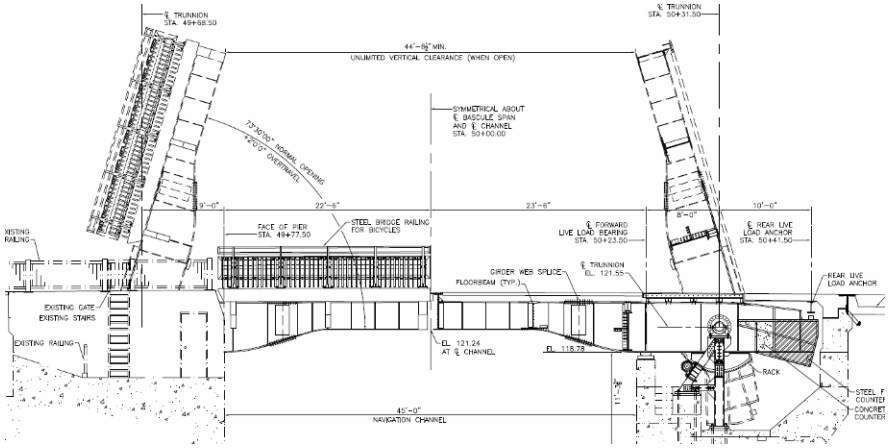
Craigie Drawbridge Project Scope

- Demolish the existing superstructure.
- Provide a temporary bridge structure to carry traffic.
- Repair substructure and modify as required to accept new superstructure.
- Install new superstructure and solid bridge deck, which will provide better weathering protection for machinery and comfort of vehicular and pedestrian traffic.
- Replace all machinery components and electrical components.



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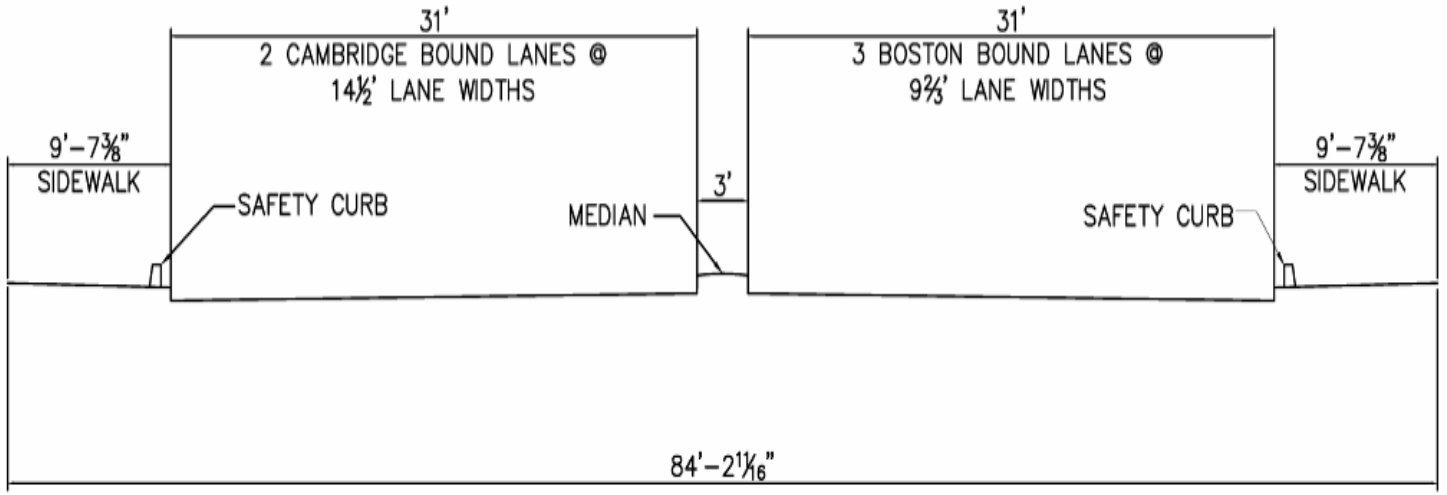
Craigie Drawbridge
Existing Cross-Section



EXISTING CROSS SECTION OF THE CRAIGIE DRAWBRIDGE

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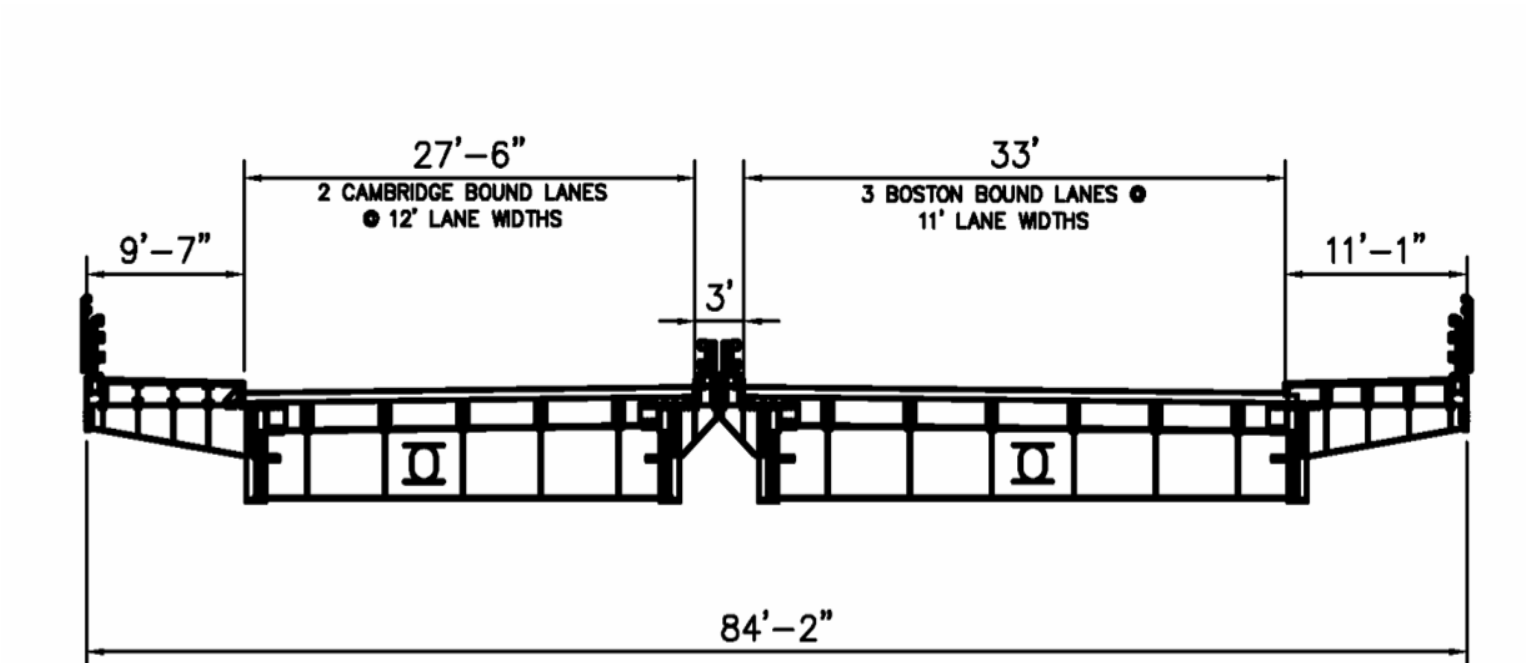
Craigie Drawbridge
Proposed Cross-Section



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Craigie Dam Bridge

- Constructed in 1906
- Used in conjunction with the drawbridge to control the Charles River water level prior to 1978.
- Consists of 9 sluice ways, one of which was a small boat lock.
- Supported on timber piles which are capped by a 2' thick concrete apron.
- Currently the sluice ways and small boat lock are out of service, but the bridge supports Rt. 28.

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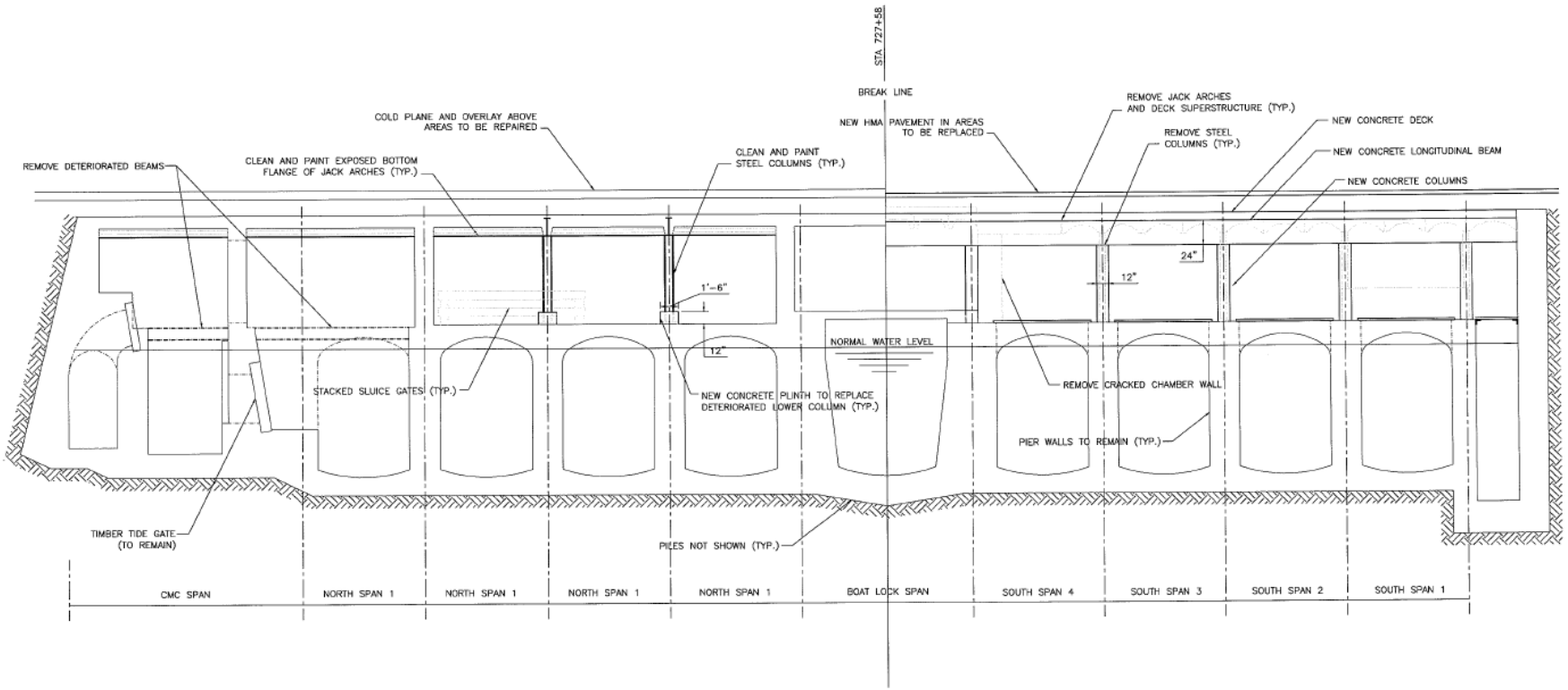
Craigie Dam Bridge
Longitudinal Cross-Section



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Craigie Dam Bridge

- **Inspection**
  - June 25, 2007
  - Conducted By DMJM + Harris
    - Reed M. Brockman, P.E. (Team Leader)
    - A.J. Cardini
    - M. Ferreira
  - Visual Inspection of all structural components of the bridge
- Deck
  - Satisfactory Condition
- Superstructure
  - Poor Condition
- Substructure
  - Poor Condition
- Culvert and Channel Protection
  - Poor Condition

Existing Condition of the Dam Bridge

- Extensive deterioration present throughout.
- Most structural members (girders, floor beams, stringers, etc..) are severely corroded and/or exfoliated extensively.
- Many structural members are currently supported by a temporary shoring system.

Craigie Dam Bridge Project Scope

- Replace all damaged and deteriorated structural members.
- Remove temporary shoring that is currently in place.
- Reconstruct bridge deck at the curb line and the existing sidewalks.

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Craigie Dam Bridge Project

Multi-Use Path

- Widen the existing sidewalk abutting the Museum of Science.
  - Remove existing retaining wall.
  - Remove the existing 5’ wide pedestrian path.
  - Provide a new 10’ wide multi-use path.
  - Construct new retaining wall at the back edge of the new multi-use path.
  - Remove and Replace trees and landscaping in front of the Museum of Science

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Project Phasing and Timetable

	Fall 08	Win 09	Spr 09	Sum 09	Fall 09	Win 09	Spr 10	Sum 10	Fall 10	Win 10	Spr 11
Design											
Contract Bidding											
Craigie Dam Bridge (Phase A)											
Craigie Drawbridge (Cambridge Bound)											
Craigie Dam Bridge (Phase B)											
Craigie Drawbridge (Boston Bound)											

DRAWBRIDGE BOSTON BOUND

DRAWBRIDGE CAMBRIDGE BOUND

DAM BRIDGE BOSTON BOUND

TEMP. BR. STAGING LIMIT

TEMP. BR. STAGING LIMIT

DAM BRIDGE CAMBRIDGE BOUND

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DCR Public Meeting on Traffic Management Plan

- Currently finalizing the traffic management plan with the Cities of Boston and Cambridge.
- DCR will hold a second meeting for the traffic management issues associated with this project.
- Future meeting will occur prior to commencement of construction.

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Questions?

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